From Smart City to Smartphone City:

Towards a Telematic Digital Strategy In Urban Environments

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Certificate of Authorship / Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree. I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Elmar Trefz **October, 2017**

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Abstract

Adam Greenfield has debunked the 'Smart City' as an unfeasible modernist vision. However, cities are already complex interactive systems, grown from the bottom up according to a complex combination of static, dynamic and interactive systems.

To represent a city as an interactive system would be as complex as the design of a future 'Smart City' itself. This research investigates the user's experience of the city. It focuses not on individual interactive touch points, but on understanding urban user experience from a macro-perspective in the context of the everyday life of the digital age.

The research positions itself between contextual bases: digital product and service design (Jan Chipchase) and Public Life Studies (Jan Gehl). It spans digital products and services via individual systems in specific environmental contexts, and Public Life Studies from a spatial design perspective. The goal here is to investigate the interplay between the two.

Further, the research investigates the performative and telematic qualities of digital implementations in public space, based on the proliferation of Smartphones and spatial interaction design in the urban environment. It thereby extends the notion of engaging with virtual and mixed realities via digital interfaces, anticipating, with reference to Villem Flusser's 'Telematic Society', the theory of engaging with a telematic reality.

The research findings point to a shift away from a Smart City approach towards a 'Smartphone City' approach, arguing for a stronger integration of Smartphones in the urban fabric rather than the deployment of new and expensive infrastructures.

Preface

> Laurene leaves her home and walks to the bus stop. Pausing at the traffic lights, she checks the progress of her bus using the NextThere app on her iPhone. She crosses the street to the stop, and waits. The bus duly arrives and she enters, paying with her Opal card. At first she must stand, since there are no seats available. She proceeds to consult her iPhone while standing, reading news from the *Le Monde* news website. After the throng disperses at Bondi Junction she sits, continuing to scan the news. When done with reading, she keeps the phone in her hand for the entire trip. Laurene presently exits the

bus (tapping off her Opal card) and walks to work. There, she enters the building with a swipe card. Laurene then spends nine hours, from 9am to 6pm, in her office - an advertising agency in the central business district of Sydney. We note that she eats her lunch at her desk. After work, she leaves her building and proceeds by foot to the bus stop. She awaits the bus while texting friends on her iPhone. Next, she boards, paying with her Opal card. During the trip she continues texting, then reads Elle Magazine on the Elle Magazine iPhone app. Presently she alights, tapping off the (very convenient) Opal card, crosses the street at the lights and heads home. After a pleasant walk, she arrives at her house.

The digital has transformed how you and I operate in everyday urban life - from convenient payment systems to asynchronous text and image communication, to hyperlinked news reading, to social networking, to location-based services… And yet, these novel digital systems lack integration with the urban systems that we know. Lawsuits against AirBnb and Uber are only the most current instances of such a lack of integration. In the face of high supply and demand, our authorities continue to struggle with the disruptiveness these new systems cause in our accepted urban systems.

Meanwhile, urban developers seek to equip new developments with infrastructure that supports digital systems. However, they struggle to identify use-cases that facilitate meaningful interactions (Greenfield 2013). For example, high-speed wireless internet infrastructures might be implemented, or large-scale screens on top of sensors and actuators. The problem is, integration from a user's use-case perspective is lacking due to poor general understanding of user needs (Kiib 2010).

Location-based services that directly interact with their surroundings like AirBnB, Uber or Tinder show that re-connection of the Smartphone within the urban environment is on the rise, without the need to deploy hardware infrastructure as promoted by urban developers and ICT companies such as IBM, Cisco and Siemens. Smartphones in fact bring the necessary computational power to achieve complex use-cases. What remains then, is the question of what those use-cases actually are, how they address citizens' needs, and how they should be implemented.